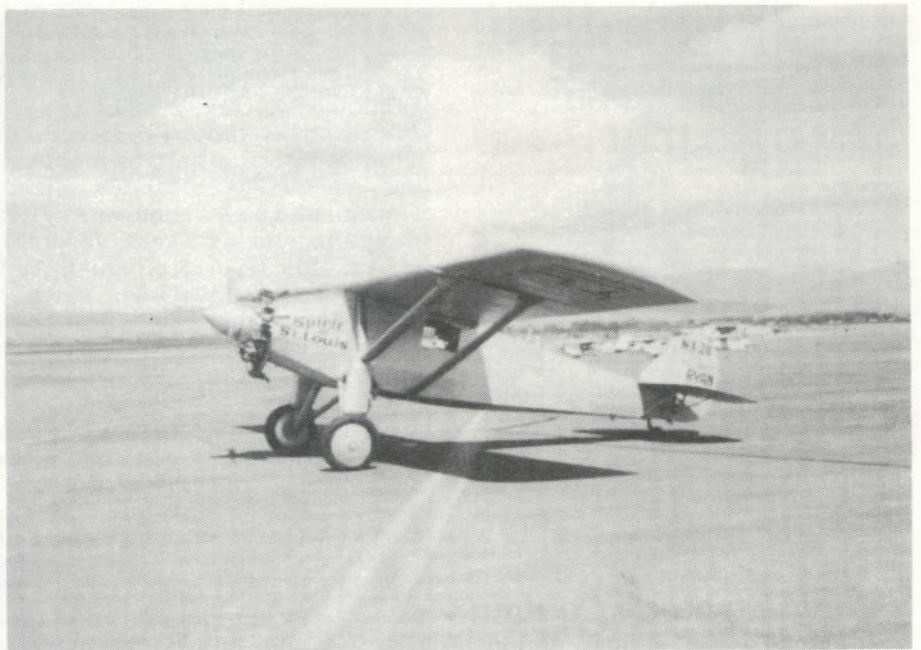


MONTANA AND THE SKY



Spirit of St. Louis replica in Helena.

Vol. 29, No. 10

MONTANA AERONAUTICS DIVISION

October, 1978

LINDBERGH COMMEMORATIVE TOUR

During mid-September the replica of Charles Lindbergh's trans-Atlantic plane, the Spirit of St. Louis, visited the Montana cities of Kalispell, Missoula, Helena and Billings.

Frank Wiley, the first Aeronautics Division Director, was in Helena when the Spirit arrived and rolled back a few years recalling his old friend Charles Lindbergh. Frank stated that the oil company he worked for in Montana told him to go to California and have a plane built around 1926. At the same time the consortium of businessmen in St. Louis, which backed Lindbergh, told him to go find a plane to make the first solo Atlantic crossing. Lindbergh arrived at the California plane factory the same time that Wiley's plane was completed. Lindbergh questioned Frank about the new plane and took it on a test flight. He liked it and decided to have his modeled after it. It took sixty days for the plane to be built, then the

Spirit of St. Louis was airbourne and on its way to New York in preparation for Lindbergh's famous flight. He flew along for 27 hours before seeing fishing boats off the coast of Ireland. He continued on and landed in the dark at Paris, becoming an immediate hero worldwide.

The replica was piloted by Verne Jobst of McHenry, Illinois. Having soloed at the age of 16, Verne has worked in aviation ever since. Starting as a hangar boy he later became a corporate pilot and airline captain. He is presently captain for United Airlines on an Douglas DC-8 airliner. Verne, an active flight instructor, and a skeet shooter, has won honors as an aerobatic pilot. He considers being part of the Lindbergh Commemorative Tour to be one of his greatest honors because it promotes aviation and keeps Lindbergh's memory alive for future generations.

The Lindbergh Commemorative Tour was sponsored by the Experimental Aircraft Association.

DEER LODGE FBO

Warren Aviation in Deer Lodge is no longer functioning as a fixed base

operator. There will be no fuel or repair services available at this airport until further notice.

WE NEED YOUR HELP!

The Montana Airport Directory is now being revised and updated for 1979. We would appreciate your help in letting us know of any changes in airport facilities, procedures, names, or phone numbers. Please take a few minutes to look through your directory and let us know of any changes.

NOTE: SIDNEY AIRPORT OBSTRUCTION

A drilling rig 166 feet tall is being constructed 1450 feet from the end of runway 10 at Sidney, Montana. The rig, which is to be in operation for three months, is 200 feet south of the runway's centerline. Extreme caution should be exercised when using runway 10/28, especially if landing on 10 or taking off on 28.



Administrator's Column

I attended the annual National Association of State Aviation Officials meeting in Indianapolis September 25-29. Many important pieces of legislation effecting aviation were explained and discussed. One of the high lights of the convention was Chairman of the Civil Aeronautics Board, Alfred Kahn's presentation on deregulation. It is my opinion that Chairman Kahn is like a breath of fresh air entering the federal bureaucracy. He is a strong believer in the competitive free enterprise system. We have already seen the results of his philosophy in a greatly expanded airline competitive market. I am confident that we in Montana will soon see more airline activity resulting in more competitive service and reduced fares.

The Federal Aviation Administration reported that they are looking into the feasibility of turning over the

general aviation Airport Development Aid Program (ADAP) grant allocations to the individual states to administer. If this should happen it will be on a voluntary basis with no administrative reimbursements to the states. Those states already having on-going loan and grant programs looked very favorably toward this type of program. As it would certainly eliminate much of the red tape and delays now being experienced in administering these funds.

* * * * *

I went to the Montana Pilots Association Fall Fly-In and board meeting September 30 and October 1 at Chico Hot Springs. Lee Baker of the Lewistown hangar presented an update on the FAA Flight Service Station closure program and the subsequent moratorium preventing the FAA from future part-timing or closing of the FSS without the written authority of the Transportation Committee of both the U.S. House and Senate. The entire MPA body was appalled at the FAA's latest announcement as presented in Airspace Docket 78-RM-22, dated September 7, 1978, in which they are contemplating the closure of several FSS including Cut Bank, MT, between the hours of 2200 and 0600. The MPA strongly opposes this FAA action. As reported in the last newsletter, the Montana Aeronautics Board has also contacted our congressional delegation regarding this issue.

* * * * *

I attended the annual Flying Farmers fall convention in Havre, October 7. Among many things discussed at the board meeting was the issue of the Cut Bank FSS hourly cut back. Both the Canadian and U.S.

Flying Farmers feel that the Cut Bank FSS is one of the key stations in the entire system, in that it serves both Canadian and U.S. pilots. Cut Bank is extensively used from the Canadian side of the border in filing flight plans and obtaining weather briefs. In addition Cut Bank is a customs clearing point and pilots use the FSS as a vital communications link with U.S. customs.

I would like to commend Walt Dion, Convention Chairman, and his committee for hosting a successful and enjoyable convention. Also, I wish to congratulate the new officers as follows:

- President:
Dave Stephens, Dutton
- Vice President:
Walt Dion, Havre
- Sec'y-Treasurer:
Leona Strouf, Moccasin
- Queen:
Betty Long, Wolf Point

* * * * *

It is with a great deal of pleasure that I learned that the U.S. House and Senate have reached agreement on a compromise regulatory reform bill which includes a provision prohibiting the FAA from imposing fees for such services as licenses and certificates without congressional approval. The FAA has been attempting to impose such fees for several years.

* * * * *

I am sure you are all aware of the Alaska Airlines and Western Airlines interest in providing increased east-west competitive airline service through Montana. If you wish to express your opinion regarding these CAB applications, please feel free to write to Richard O'Brien, Chairman, Montana Aeronautics Board, at our address.

DEPARTMENT OF
COMMUNITY AFFAIRS

Thomas L. Judge, Governor
Harold A. Fryslie, Director
Martin T. Mangan, Deputy Director

Official Monthly Publication
of the
AERONAUTICS DIVISION
Phone 449-2506
Box 5178
Helena, Montana 59601

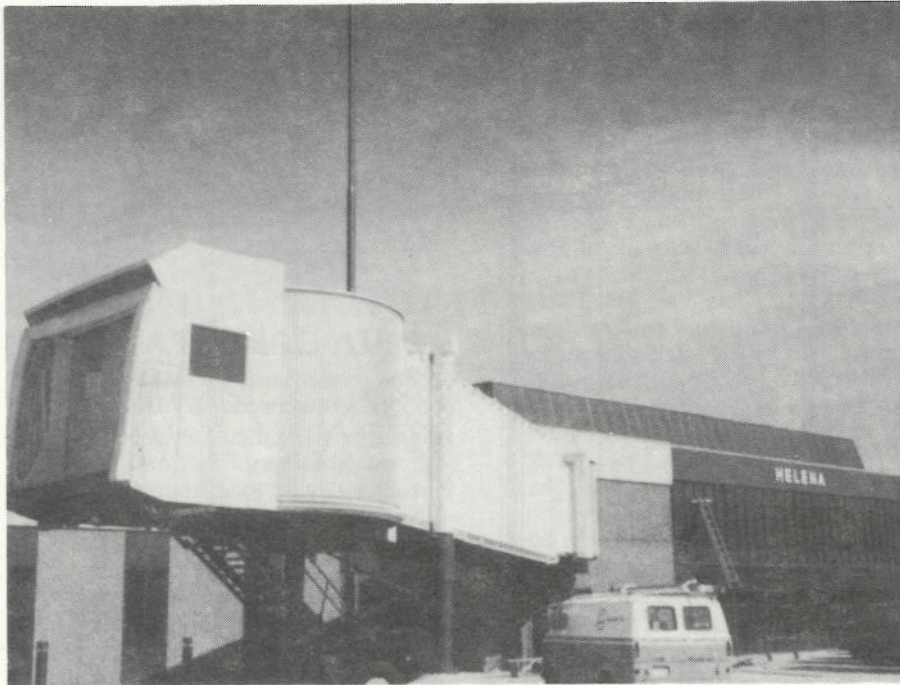
Michael D. Ferguson
Administrator

Board of Aeronautics
Richard O'Brien, Chairman
William A. Merrick, Member
Bruce Vanica, Member
A. J. Patenaude, Member
Herb Sammons, Member
Merle Thorstad, Member
Charles E. Marshall, Member

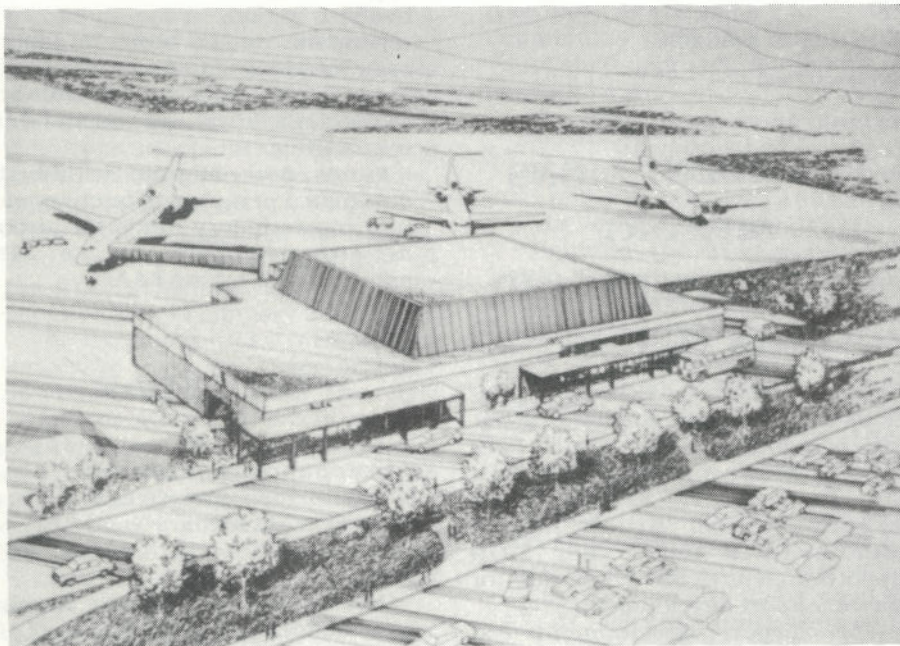
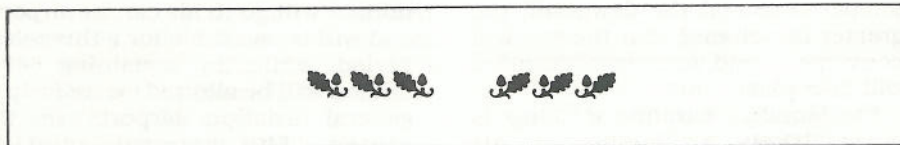
MONTANA AND THE SKY is
published monthly in the interest of
aviation in the State of Montana.
Second-Class postage paid at
Helena, Montana 59601
Subscription \$1.50 per year
Edited by: Paula K. Lindsey



THURBER'S HELENA



Airline boarding will be a pleasure through the enclosed jetway at the new Helena terminal.



An artist's illustration of the new Helena terminal building which will be dedicated October 29.

HELENA TO DEDICATE NEW TERMINAL BUILDING

On Sunday, October 29, 1978, the Helena Airport Board will dedicate its new \$2 million terminal building. The new complex located on the north side of the airport has a total floor area of 37,000 square feet. Airline passengers using the new terminal will be treated to all-weather comfort when boarding or deplaning thanks to the new second level jetway installed at the terminal building.

PILOTS ALERTED TO POTENTIAL ALTIMETER HAZARD

A potentially hazardous condition may exist in some models of altimeters. The hazardous condition is caused by the misplacement of the barometric knob on the barometric setting shaft of the altimeter. If such misplacement exists, forward pressure on the knob may disengage the barometric pressure setting scale from the altimeter pointers. This disengagement could introduce an altimeter error when pressure correction is applied. Knob positioning on the shaft is critical on many altimeters.

Pilots should be alerted to observe the following, particularly before IFR flight:

- A. Rotation of the barometric pressure setting scale knob results in movement of both the barometric pressure setting scale and the altimeter pointers;
- B. Forward pressure on the knob during rotation does not disengage the pressure setting scale from the altimeter pointers;
- C. The altimeter indication is in accord with the setting of the barometric pressure setting scale, as referenced to the altitude and current barometric setting at the location of the check.

(FAA Flight Instructors Bulletin)

ENGINE FAILURE FROM ICING

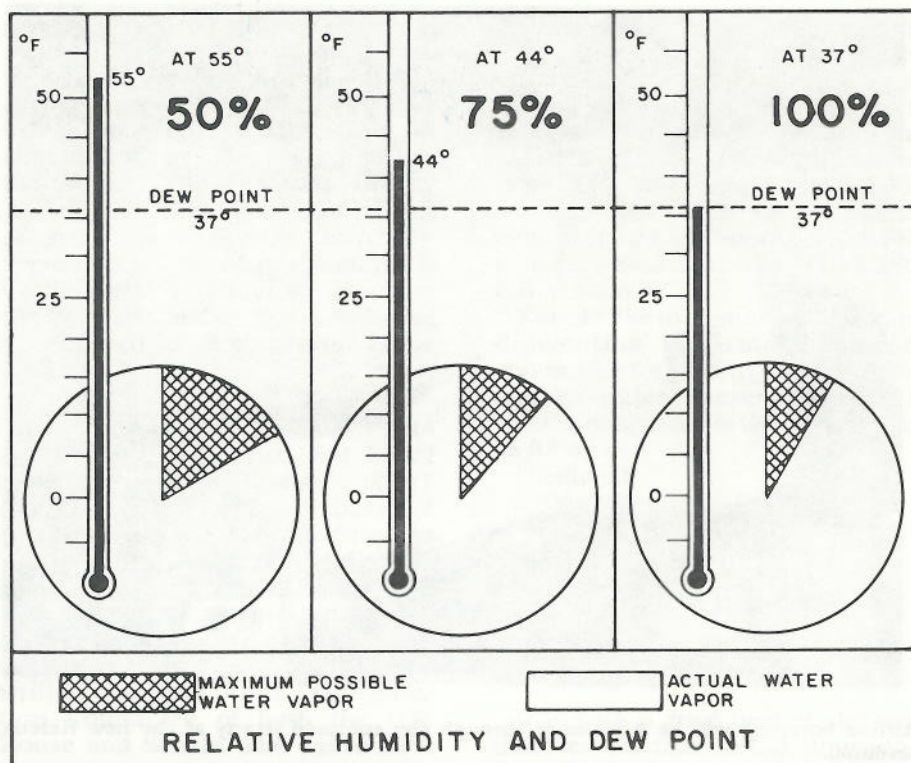
Engine failure from carburetor icing can happen anytime of the year and in any climate. Take for example the Cherokee pilot landing at a desert ranch in Arizona who didn't trouble to use carb heat during his landing approach, as he had little reason to anticipate icing conditions on this 79 degree F. morning in August. The sky was clear with a little patchy fog on a hillside. The dewpoint was 69 degrees.

When the pilot applied power to avoid landing short there was no response. The propeller just continued to windmill as the runway disappeared behind a clump of cottonwoods. He was fortunate. He suffered only two broken legs and the loss of his aircraft.

On a long descent, make sure now and then that your prop is really idling, not just turning in the wind. The only panel indication of a dead engine would be a drop off of engine temperature. Lengthy descents with power-off, even with full carburetor heat may lead to icing because the heat source — exhaust stacks — are allowed to cool. Opening the throttle during descents will normally keep the stack hot enough for carburetor heating to work.

The Venturi tube in the carburetor has an hour-glass shape and it acts as a kind of refrigerator system, working on the principle that air cools as it expands. At the same time the vaporization of fuel that takes place in the carburetor is also accompanied by a drop in temperature. As the moisture drops, moisture in the air may condense into water, and if the temperature is below freezing in the carburetor, icing will take place. As a result, it is not uncommon for ice to form in the carburetor when the outside temperature is in the eighties, or even nineties F. As the accompanying chart indicates, the optimum conditions for carburetor icing are when the air temperature is between approximately 0 degrees and 15 degrees C (32 and 59 degrees F) and the dewpoint is in the same range.

The dewpoint (temperature at which water vapor changes to liquid) is important because the narrower the "spread" between the current



temperature and the dewpoint, the greater the chance that the two will converge — and water condensation will take place.

Incidentally, carburetor icing is more likely to occur at air temperatures, above freezing than below — when relatively little moisture is available.

(Minnesota Flyer)

PRESIDENT SIGNS AIRPORT DEVELOPMENT AID PLAN FUNDING

Carter signed the DOT appropriations bill on Friday, August 3, 1978, which contained the fiscal 1979 funding for general aviation airports. On October 1, Secretary of Transportation Brock Adams announced a fiscal year 1979 apportionment of \$378.8 million for public airport development.

The Airport Development Aid Program (ADAP) funds are administered by the Federal Aviation Administration. A total of \$330.0

million will go to air carrier airports and will be available for a three-year period, while the remaining \$48.8 million will be allotted exclusively to general aviation airports in the states. The general aviation apportionments are available for a two-year period.

Montana ranked tenth in general aviation funds with a total allocation of \$1,055,589. Alaska, California and Texas ranked first, second and third respectively.

Funds not obligated within the designated periods will be channeled into discretionary funds for airport development which are also administered by the FAA.

CALENDAR

October 24-26 — Aviation Maintenance Foundation, First Annual Symposium, Oklahoma City, OK — Contact Richard Kost, P.O. Box 739, Basin, WY 82410, (307) 568-2466.

October 28 — Second Annual Great Falls to Jackpot "Halloween Air Race." Contact Patti Thompson, 2824 Fourth Avenue South, Great Falls 59405.



NAVIGATIONAL AIDS

By: Gerald Burrows
Aviation Representative

SCO is the identifier for the new Scobey H-marker operating on an assigned frequency of 283 KHz. Tune in this new 50 watt Wilcox transmitter the next time you are in north-eastern Montana.

MLK at Malta has undergone major antenna and counter-poise modifications recently in hope of getting the station operating at maximum efficiency. Malta also has a new 50 watt transmitter.

The H-marker at Havre, LDS 389 KHz, will be flight checked as soon as the new crystals are installed. Hopefully, this will be accomplished by the time you receive this newsletter. The Havre NDB is used as part of the VOR approach.

PLS, Polson and JDN Jordon were off the air due to transmitter and incoming power supply problems. They are again back at full power.

We have scheduled improvements at Plentywood and Sidney yet this fall. If the state-operated NDB in your vicinity is not operating the way you think it should, please let us know.

Unicom Frequencies

The new frequencies for unicom stations have been implemented by the FCC sometime ago and their effective date is January 30, 1979.

The frequency 123.0 MHz will no longer be used for tower or flight service station fields. The new frequency 122.95 MHz will now be used for those stations. The unicom stations at Helena and Miles City will be changed to the new frequency by the time you receive this newsletter, and the stations at Lewistown, Butte, Bozeman, Livingston, and Missoula by the end of the month.

We believe the privately-owned stations at Great Falls and Billings have already been changed to this frequency.

HELPFUL HINTS FOR INSTRUMENT APPROACHES

Review the instrument approach procedures during preflight planning. Check the departure, destination, and alternate airports for at least the following considerations:

- approaches available and their compatibility with the aircraft equipment,
- limitations on use of approaches,
- NOTAMS affecting the approaches,
- straight-in-landing DH or MDA and visibility minimums,
- circle-to-land MDA and visibility minimums,
- sources of weather updating service,
- effects of remote altimeter settings, and
- missed approach procedures and limitations.

Check the required aircraft approach aids before takeoff.

Know the minimums for the approach category of the aircraft being flown.

Establish your own personal approach minimums based on recent instrument flight experience and familiarity with the aircraft and equipment to be used. Your personal minimums may be higher than published approach minimums, but cannot be less.

Fly the instrument approach procedure as published.

Plan an orderly descent to reach the Minimum Descent Altitude prior to the Missed Approach Point.

Maintain the Minimum Descent Altitude for the approach being flown until the runway environment is in sight and until descent is necessary to make a safe landing.

Immediately execute a missed approach if the runway environment is not clearly visible at the Missed Approach Point or if it is lost at any time thereafter.

Fly the required missed approach procedure with the same precision used for an instrument approach.

Cancel your IFR flight plan with ATC if VFR conditions are met and you elect to proceed VFR.

(Tommy Hancock — Arkansas Accident Prevention Specialist)



BIRDS OF A FEATHER . . .

By: Dale Uppinghouse
Accident Prevention Specialist

There is a school of thought which goes, "You can't avoid having accidents." — Definitely not so! The airlines and corporate aviation have astoundingly low accident rates. It is because they have more clocks on the dashboard. — Again, t'aint so. A study of case histories of aircraft accidents will show: No correlation exists between the number of instruments, radios, or engines and what caused the crash.

It's the pilot's casual attitude, as opposed to the professional attitude, that makes the difference. (How many airline or corporate pilots start their takeoff run from mid-field?) General aviation can approach the enviable safety record of the airlines and corporate pilots if they will work toward proficiency and professionalism.

Two prime ingredients that go into making a proficient pilot are competency and recency of experience. In one recent year, pilots with less than 10 hours in the last 90 days had 24% of the accidents.

Well now, we can't all fly 150 hours every 90 days, but we can get frequent checks and regular dual from qualified instructors. Air carrier and executive pilots do this and suffer no shame or stigma. It's the professional approach.

Even birds get ready for their annual flights down south. Not being born with feathers, it becomes even more important for us to work at maintaining proficiency. Get frequent checks and instruction.

TOMORROW'S AUTOMATED FSS IS ON THE LINE

Beep! Beep! Pilot dials a number. A computer answers. "Hello. You have been connected to the Teterboro Automated Flight Service Station. This is a computer talking. How may I help you? Would you like to file a flight plan? Do you want a briefing? Would you like to talk to a specialist?"

The National Aviation Facilities Experimental Center FSS Branch has originated the concept and designed, developed, fabricated, and is currently checking out a model for mass dissemination of aviation weather and aeronautical information. It's still a long way from a fully automated FSS that the FAA hopes to develop.

The prototype engineering model is designed to handle 20 incoming telephone calls simultaneously, giving each caller the choice of 10 basic options, any or all of which he may obtain by uttering the following underlined words. The pilot can ask to file, amend or close a flight plan; to speak to a specialist; and/or to be given a briefing. If he requests a briefing, he then is given the choice of a north, east, south, west route oriented or local area briefing.

The briefing will consist of forecasts and observations en route and in the terminal area, flight precautions, NOTAMS (notices to airmen concerning such things as runway closings) and pilot reports. At the end of the briefing, the pilot is offered the same options (for example, he may want to talk to a specialist to obtain an interpretation of the briefing) until he indicates he is satisfied. At this point, the system says: "Thank you. Have a good flight."

At the heart of the NAFEC mass aeronautical data dissemination system is a digital computer with a disc memory on which are stored the briefings. Other major components of the system are an Utterance Recognition Device (URD), which is programmed to recognize 27 different words and numbers; a message composition unit; an encoder for converting spoken words to digital form; and a system-switching unit which connects the caller to whatever service he

requests.

Basically, this is how the system works: A pilot dials into the computerized system. He listens to the introductory message which gives him his options and instructions. The pilot, as an example, says "briefing." URD recognizes the word and sends a special code to the computer. The computer initiates a message from the memory disc through the output channel to the pilot telling him to wait for the cue tone and then select (speak) the briefing he wants. The computer then tells URD to issue a cue tone and listen for the pilot's reply. If the pilot says "north," URD recognizes the word and sends the "north" code to the computer, which then initiates the "north" briefing message.

Fantastic? No? Yes? "Thank you. Have a good day."

Editor's Note:

I wish to thank Frank Wiley for the use of his personal stationery masthead as seen on our front cover. You will be seeing this M2 Ryan, Hispano Swiza from time to time as it is utilized in our newsletter.

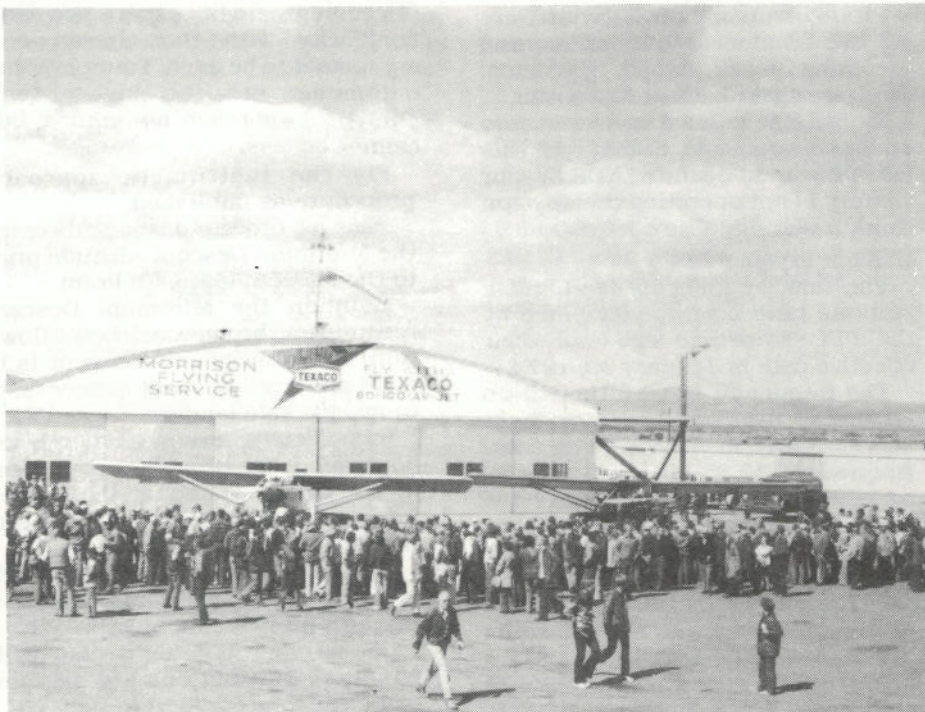


YELLOWSTONE HAS RECORD YEAR

By: Ted Mathis, Manager
Yellowstone Airport

On October 1, the shutters were hung and the water pipes were drained as the Yellowstone Airport closed for another season.

This year Frontier and Western Airlines, enplaned 10,769 and deplaned 22,957, for a total of 33,726 passengers served. This figure was up 15.2% from 1977 and was a new record for the airport. General aviation traffic also appeared to be up for the year, however, no exact traffic count was made.



There was quite a crowd on hand to view the Spirit of St. Louis replica in commemoration of Charles Lindbergh's trans-Atlantic flight.



Western and Frontier Airlines boarding passengers at Yellowstone Airport this past summer.

BRAKING TECHNIQUE

It is forever interesting to note how in seeking safety in flight we in aviation tend to study and research the more complex aspects of the picture while some of the more homely aspects of flying are allowed to continue to produce accidents.

Every pilot flying today uses the aircraft wheel brakes, but how many airmen have given any deep thought to their use, the proper techniques to be used in securing maximum braking, and other factors related to and surrounding the use of wheel brakes.

Most pilots are aware that the use of excessive braking on an aircraft shortens the life of the brakes themselves and the aircraft tires. Therefore the number one point which can be made is that aircraft should not be taxied at excessive speeds with excessively high throttle settings so that the aircraft is kept under control by "dragging the brakes" or excessive use of the brakes. Similarly using excessively high landing speeds "because there is plenty of runway ahead" is a poor technique. Excessively high landing speeds produce added tire wear, and if the brakes need to be used for any reason such as when the tower calls for a short turn-off of the active runway, your need for excessive braking will cause unnecessary wear

on both the brakes and the tires.

However some pilots tend to tell themselves "there is safety in speed" at touchdown if there is plenty of runway. Not so if you have a tire blow-out. Not so if you have to make that short turn-off. Not so if an animal or another aircraft or other vehicle run on the runway ahead of you. Worse yet, excessively high speed touchdowns cause you to lose the technique of touching down at proper speeds so that some day when you want a slow touchdown because of a short runway, or because of the presence of water or ice on the runway, your ability has been deteriorated by your own derogation of a proper technique, because of your failure to practice it.

After landing touchdown, aerodynamic drag will help slow the aircraft during its upper 20% to 30% of its touchdown speed, but during the lower 60% or 70% of the touchdown speed reduction, braking plus rolling friction will be the only way to reduce speed. Knowing as we do that the best aircraft wheel brakes "are nothing to write home about" should therefore keep us from landing with excessive speed, if we consider the possibilities of the tower calling for a short turn-off or the inadvertant appearance of an animal, aircraft, or other vehicle on the runway ahead of us. Perhaps the mowing tractor will without warning turn onto the runway.

During the early part of the roll-out after landing, braking capability is reduced to some degree by the lift being produced by the aircraft wing. During the period excessive braking can slide a wheel, and most pilots are well aware that a sliding wheel produces much less braking action than a heavily braked wheel which is not sliding. Some authorities tell us the way to reduce this lift after touchdown is to open the spoilers, if your aircraft has them, or retract the flaps. We don't tell you that because there have been numerous accidents through the years where the pilot attempted to retract the flaps while rolling at high speed to secure better braking action, only to discover that he had inadvertently retracted the landing gear. In light aircraft the chances of getting additional braking effectiveness at high speed by retracting the flaps is so slight, for the average pilot, that it's not worth his risking an inadvertent gear retraction.

In nosewheel equipped aircraft, lower the nosewheel gently to the runway as quickly as possible after landing touchdown to reduce wing lift as much as possible. If you have to apply braking immediately thereafter for any reason, apply as much back-pressure to the wheel as possible without lifting the nosewheel off the runway for you need it to steer. The reason for doing this is that under conditions of deceleration the nosedown pitching force created by braking and rolling friction can transfer considerable downward force to the nosewheel where it is unusable to create downward friction force on the main gear to enhance braking action. We want as much weight as possible kept on the main gear wheels.

Judicious use of the brakes is vital because as soon as the wheels begin to slide the coefficient of friction drops sharply and the braking action is much less effective. Braking is always reduced by sliding wheels, and in addition we may have problems with directional control when the wheels slide.

Most aircraft brakes are barely large enough for their purpose. Applying and releasing brakes thinking you are allowing them to cool is a waste, for the period is so short no real cooling takes place.

(Continued on Page 8)

Apply the brakes smoothly and firmly, as much as you need, but not enough to cause the tires to skid.

Braking action on wet sod or wet runways or on frosted or icy sod or runways is virtually non-existent in light aircraft. Landing rolls may increase anywhere from 40% to 300% in these conditions depending on conditions of gross weight, density altitude, wind, etc.

One of the most common errors which pilots tend to make is to fail to fully close the throttle during a landing roll under critically short-field conditions. This seems to be a real hazard. We guess it is the reaction of the human to a stress condition where he has some unconscious thought that he "may

need to go around if things get out of hand." Unfortunately that partially open throttle may be the factor which causes all his braking efforts to be feeble and nearly useless.

The finest safety action which one can initiate to overcome braking problems is to utilize proper speeds during taxi and during takeoff and landing operations. It's the only sure, positive help an airman "has going" for him when the situation is critical. Be right in the first move, the use of proper speeds, and you probably will avoid problems in the second move, the use of proper braking.

(Illinois DOT)



WANTED: STATE HELICOPTER PILOT

Commercial, 1500 hours T.T. helicopter. Must meet O.A.S. requirements. A & P preferred. Please send resume to Monte Ballou, Department of Livestock, Capital Station, Helena, MT 59601.



MEMBER

NATIONAL ASSOCIATION OF STATE AVIATION OFFICIALS

PURPOSE—"To foster aviation, as an industry, as a mode of transportation for persons and property and as an arm of the national defense; to join with the Federal Government and other groups in research, development, and advancement of aviation; to develop uniform laws and regulations; and to otherwise encourage co-operation and mutual aid among the several states."



OCTOBER, 1978

Second-Class

Postage Paid at

Helena, MT 59601

P.O. Box 5178

Helena, Montana 59601